

FIG. 1

	$d_1$	$d_2$	$d_3$	...	$d_{\beta-1}$	$d_{\beta}$
$p_1$	$w_{11}$	$w_{12}$	$w_{13}$	...	$w_{1\beta-1}$	$w_{1\beta}$
$p_2$	$w_{21}$	$w_{22}$	$w_{23}$	...	$w_{2\beta-1}$	$w_{2\beta}$
$\vdots$						
$\vdots$						
$p_{\alpha}$	$w_{\alpha 1}$	$w_{\alpha 2}$	$w_{\alpha 3}$	...	$w_{\alpha\beta-1}$	$w_{\alpha\beta}$

FIG. 2

**FEDERAL BUREAU OF INVESTIGATION**

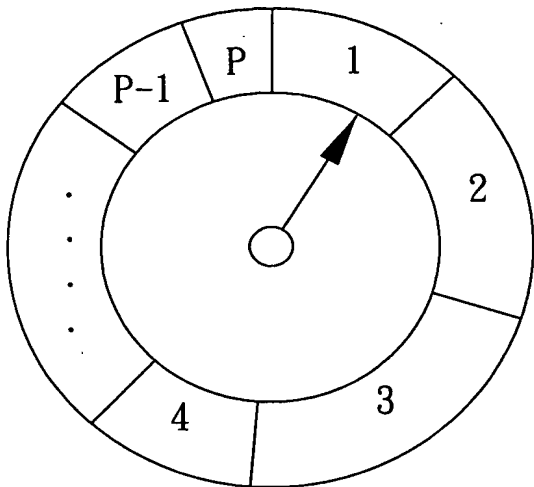


FIG. 3



Transportation  
crew

FIG. 5

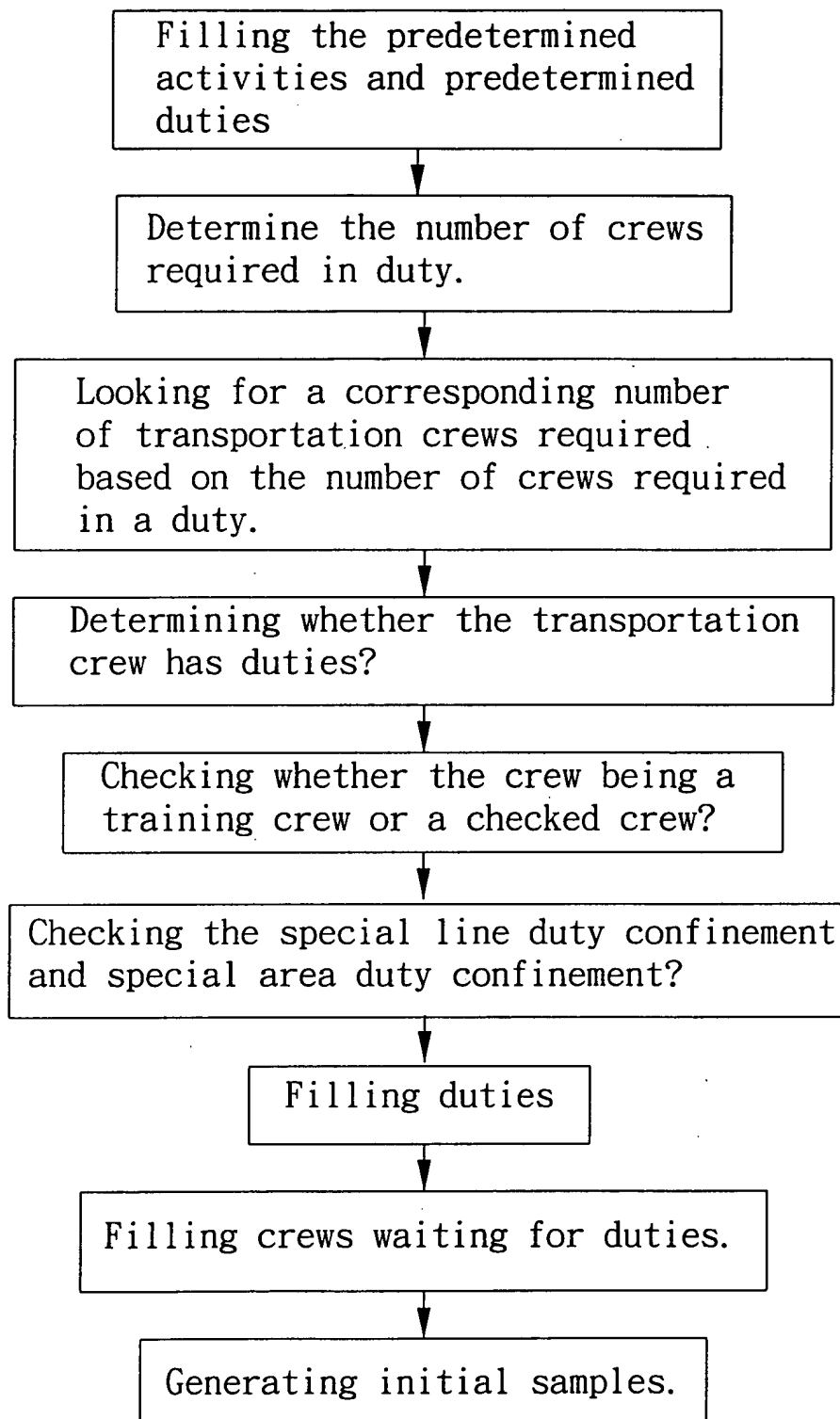


FIG. 6

### PENALTY

#### Absolute confinement

One holliday  
☒ per week  
24H10H    FDP    MRT    32 hours in 7 days

#### Optimun confinement

One holliday per week(max)  
  
☐ back to base

One holliday per week(min)  
  
☒ Continuous Layover  
  
☐ 100H

PNC Err  
  
☐ 6leg\_no\_pnc1

☒ Average  
FT     PNC     layover

PNC(1-5)

L/O(1-5)

PNC(WK)

L/O(WK)

### GA Parameter

Time(min)

Generation

SampleSpace

MutationRate

Population

MutationTimes

#### Crossover Rate

☐ crossoverlp  
☐ crossover1  
☐ crossover2  
☐ Mutation\_999

☐ cantpnc-log999  
☒ Elitism      
☒ Record the interval

✓ OK

✗ Cancel

↺ Default

FIG. 7

DocId:34070704

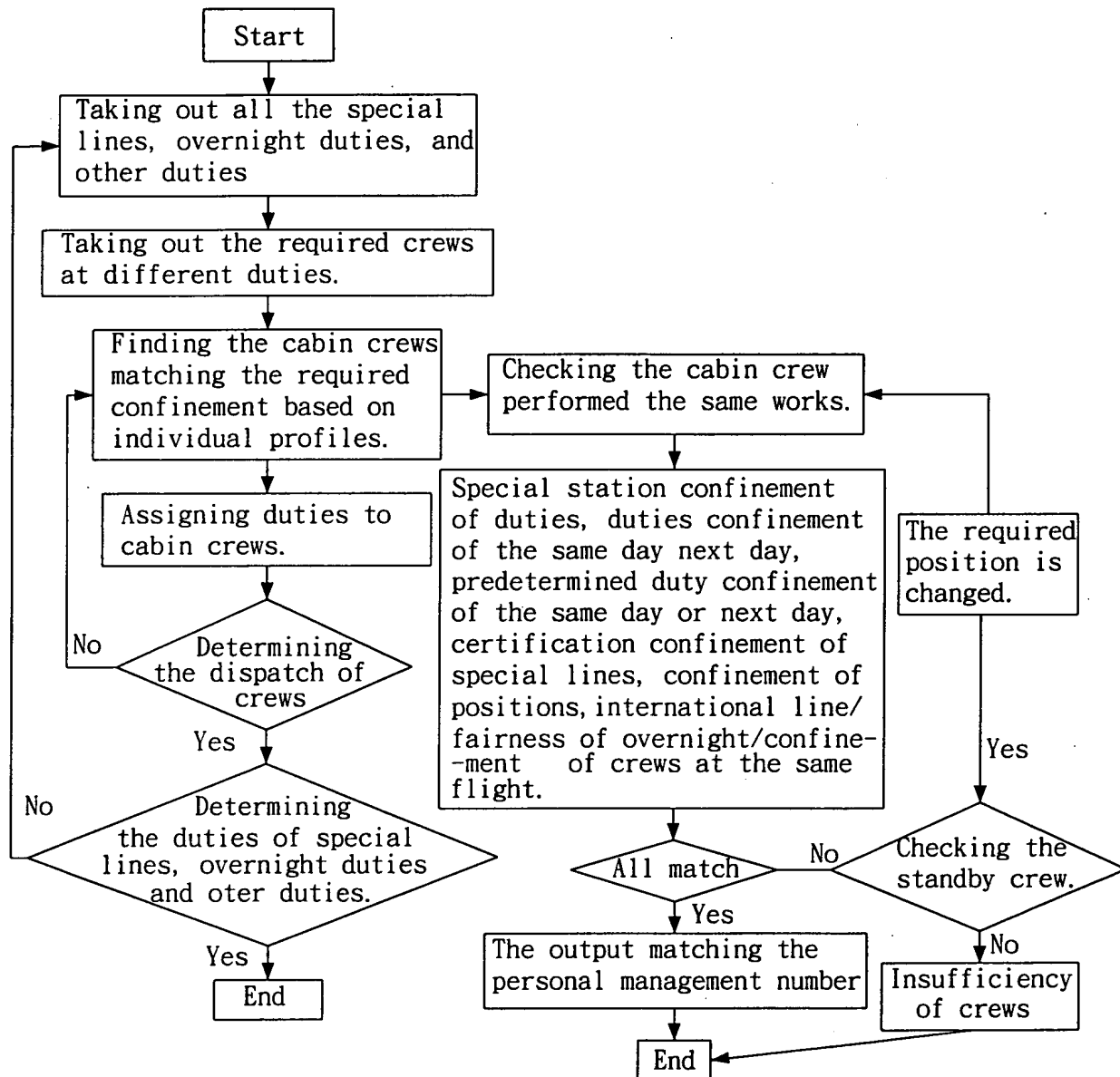


FIG. 8



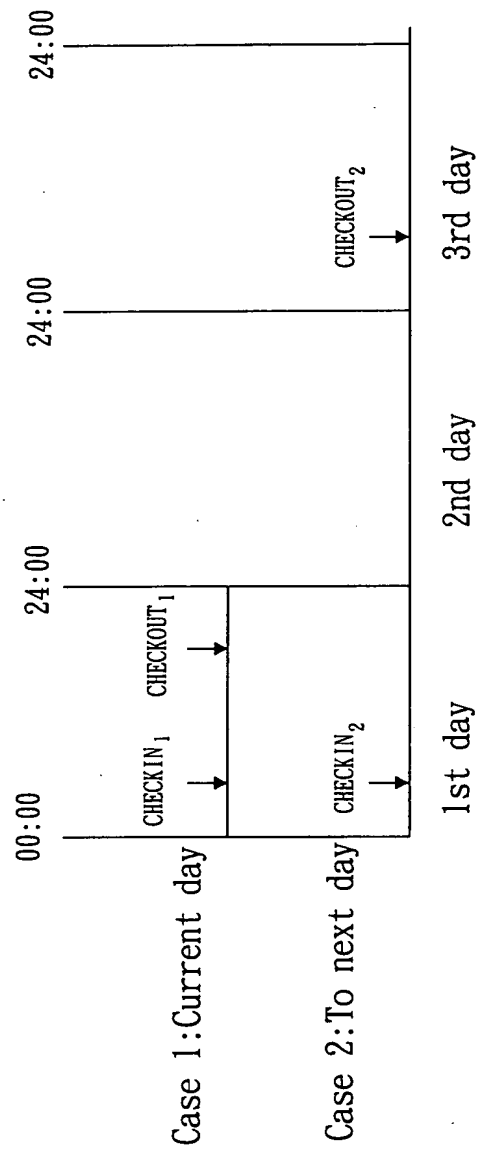


FIG. 9

**TIME PERIOD**      2001/ 3/1 -15

FT average 2105 minutes at this stage  
 FT average 12177 minutes in the past  
 Perdiem average 3551 minutes at this stage  
 Perdiem average 23156 minutes in the past  
 Enter Kernel , please wait...  
 Press Resume to continue....  
 Continue Process  
 Press Resume to continue...

☐ Test mode    ☐ Log mode

Operation number of times	4303	Total fitness value	561360
MRT	0	7D24H	0 Custom 528
PNC	124	Sbt	82 Avg 427300
Sbc	78	D/O	303 P999 0
AC	8040		

User setup

Run

Setup  
Resume

Exit

☐ Generate log file    10    ☐ Generate Multi-Schedule

**System kernel parameters**

**Confinement penalty value setting**

☐ One holiday per week    ☐ Average    ☐ SB limit times PNC(1-5)

Limit number of days FTP Avg    5    100    10

Optimum number of days PNC Avg    1    50    500

Minimum number of days    100    50    500

Minimum number of days    60    100    5

Minimum number of holidays    60    100    5

☒ MRT    60000    ☒ International line average    100    Average    50

☒ Custom    50    ☒ b/d limit time    100    Average flight time    5

**Operation parameter**

Generation    50000

SampleSpace    180

Population    100

MutationRate    0.8

MutationTimes    1

✓ OK
✗ Cancel
↺ Default

FIG. 10